

## Pre-AP Biology – Ecology/Evolution – Study Guide for Test

- 1) Be able to rank levels of atoms to biosphere, from smallest (least inclusive) to largest (most inclusive).
- 2) Define ecology and describe what ecology is.
- 3) Know what interdependence is and how it plays a role in ecology.
- 4) Be able to provide an example of interdependence.
- 5) Know what biosphere, ecosystem, communities, populations, and organisms are and what each item consists of (living, non-living, both, or none).
- 6) Understand what groundwater is.
- 7) Be able to define what the water cycle is and each of the stages of water cycle.
- 8) Be able to explain what the carbon cycle is and how it works.
- 9) Explain how the nitrogen cycle works.
- 10) What element is the most abundant element in the atmosphere?
- 11) What form of nitrogen is required for most plants to use?
- 12) Explain nitrogen fixation and know what bacteria are used in this stage of nitrogen cycle.
- 13) Explain the difference between ammonification, nitrification, and denitrification.
- 14) Know the process in which phosphorous cycles through the environment.
- 15) Distinguish between abiotic and biotic factors and provide an example of each.
- 16) Understand what percentage of energy transfers to the next highest trophic level in energy flow.
- 17) Be able to distinguish between niche and habitat.
- 18) Know the difference between adaptation and acclimation.
- 19) Understand what consumers, producers, herbivores, omnivores, carnivores, detritivores, and decomposers are.
- 20) Understand what food chains and food webs are and how they differ.
- 21) Know the difference between natural selection and artificial selection.
- 22) Understand what strata are and how they can tell about the earth's history of species.
- 23) Define evolution.

- 24) State what the four parts of natural selection are and explain what each part is.
- 25) Know and explain the four types of protective adaptations.
- 26) Define fitness and be able to describe what it is.
- 27) Explain the difference between relative age and absolute age.
- 28) Know the difference between homologous structures, analogous structures, and vestigial structures.
- 29) Distinguish between convergent and divergent evolution.
- 30) Explain what density-dependent and density-independent factors are, and how both factors differ.
- 31) Be able to explain the three types of symbiosis and provide an example for each.